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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/599,967	10/16/2006	Rakesh Kumar	PR60682USW	7447

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EXAMINER	
PAGONAKIS, ANNA	

ART UNIT	PAPER NUMBER
1614	

NOTIFICATION DATE	DELIVERY MODE
02/28/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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LAURA.M.MCCULLEN@GSK.COM

Office Action Summary	Application No.	Applicant(s)	
	10/599,967	KUMAR ET AL.	
	Examiner	Art Unit	
	ANNA PAGONAKIS	1614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 January 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *14-17; 19-22, 25* is/are pending in the application.

4a) Of the above claim(s) *19-22* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *14-17 and 25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

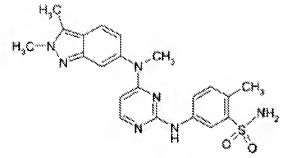
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

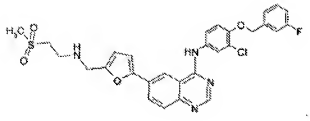
1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/16/2006, 3 sheets*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Applicant's election with traverse of Group I, claims 14-17 and specie election of compounds:



and



in the reply filed on 1/7/2008 is acknowledged. The traversal is on the grounds that no basis was provided for lack of unity amongst species. This argument is not found persuasive because the standard for finding a lack of unity is proper when there is no technical relationship amongst the inventions that involves at least one common or corresponding special technical feature. The expression special technical feature is defined as meaning those technical features which each claimed invention, considered as a whole, makes over the prior art. Since, as stated in the Restriction Requirement, administration of a pyrimidine and a quinazoline compound does not contribute over the prior art, there is no common special technical feature amongst the claims.

Claims 13, 18, 23 and 24 have been cancelled. Claims 19-22 have been withdrawn. Claim 25 has been added.

Claims 14-17 and 25 are presently under examination and are the subject of this Office Action.

Information Disclosure Statement

The information disclosure statement filed on 10/16/2006 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP 609 because reference 3 does not appear to be present. It has been placed in the application file, but the information referred to herein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission of any for purposes of determining compliance wit the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP 609.

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The title simply states "cancer treatment method" without detailing the type of method or compounds used.

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which Applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 14-16 are rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter which applicant(s) regard as their invention.

Applicant uses the phrases "salts, solvate or physiologically functional derivative." It is unclear to the examiner which derivatives are being claimed as the claims fail to provide any compounds of the instantly claimed subject matter. It is not clear from the claim language whether the compounds are corresponding to the structure of the instantly claimed "salts, solvate or physiologically functional derivative" or to the function is unclear.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 14-17 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boloor et al. (WO02/059110, provided by Applicant) and Ciardiello et al. (Expert. Opinoin Investig. Drugs 2002 Vol. 11(6): 755-768) in view of Rusnak et al (Molecular Therapeutics 2001, pages 85-94).

Boloor et al. teach novel pyrimaidineamines as inhibitors of VEGFR-2 kinase activity. Such pyrimaidineamines are useful in the treatment of disorders, including cancer, associated with inappropriate angiogensis (page 3 of specification). The reference teaches the compounds may be used to treat cancer and can be used in combination with other anticancer drugs, such as growth factor function inhibitors including inhibitors of hepatocyte growth factor, erb-B2, erb-B4 and epidermal growth factor receptor (EGFr).

Ciardiello et al. lists a variety of human cancers that express EGFR: non small cell lung carcinoma, colorectal, gastric, pancreatic (which is specifically noted to be resistant to treatment with EGFR is overexpressed), ovarian, prostate, breast head and neck, and kidney tumors (see Table 1, page 758). The reference also states that TGF-alpha and EGFR are overexpressed in the majority of human cancer types, including NSCLC, breast and neck cancer, gastric, prostate, bladder, ovarian, colorectal carcinomas, and glioblastomas (page 757).

Rusnak et al. teach that GW2016 (the elected compound of formula II) is a potent inhibitor of ErbB-2 and EGFR tyrosine receptor kinase domains (see: abstract; Table 1 structure

on page 88). The reference teaches that OSI—774 (Tarceva) and ZD1839 (Iressa) are small molecule epidermal growth factor receptor-selective tyrosine kinase inhibitor (abstract). The reference teaches treatment of and growth inhibition in human tumor cells overexpressing ErbB-2 and/or EGFR in a variety of cancer types: head and neck, vulva, breast, lung and gastric (see abstract and Table 3, page 90). The reference also teaches in vivo xenograft experiments with head and neck cancer and breast cancer cells (see abstract page 93 and Figure 7).

Neither of the three reference teach the presence of instantly elected formula I. Given that Boloor et al. teach that pyrimaidineamines are capable of treatment of cancer, one of ordinary skill in the art would have been motivated to create a pyrimaidineamine with a reasonable expectation of success. Further, it would have been obvious to a person of ordinary skill in the art to treat cancer with the elected compound GW2016 (Rusnak) in combination with the compound of formula I since both are pyrimaidineamines and thus both are capable for treatment of cancer. One would have reasonable expectation of success having been taught in the art that the majority of cancers overexpress EGFR or ErbB2 (Ciardiello).

In light of such, it would have *been prima facie* obvious to one of ordinary skill in the art to employ pyrimaidineamine as the cancer compound. Such a person would have been motivated to do so because it, would have been reasonably expected that each of the compounds would have exerted the same or substantially anti-cancer effect as the elected compound of formula II specifically disclosed by Rusnak, without any appreciable loss of activity of the composition in achieving the disclosed therapeutic objective (i.e., treatment of ccancer), absent factual evidence to the contrary.

With respect to claims 16, 17 and 25 the determination of pharmaceutically acceptable salts, that have the optimum therapeutic index are well within the level of one having ordinary skill in the art. Accordingly, the artisan would have been motivated to determine optimum pharmaceutically acceptable salts in order to get maximum effects of the active agent. Moreover, a recitation of the intended use of the claimed invention would result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claims. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See In re Casey, 152 USPQ 235 (CCPA 1067) and In re Otto 136 USPQ 458, 459 (CCPA 1963). Additionally, Suggestion, teaching or motivation does not have to be explicity and "may be found in any number of sources, including common knowledge, the prior art as a whole or the nature of the problem itself", citing Dystar Textilfarben GMBH v. C.H. Patrick Ci., 464 F.3d 1356 (Fed. Cir. 2006). For these reasons, the selection of a known material based on its suitability for its intended use, in this case the compounds of formula I and II, support a prima facie obviousness determination in Sinclair & Carroll Co. v. International Corp., 325 US 327, 65 USPQ 297 (1945).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANNA PAGONAKIS whose telephone number is (571)270-3505. The examiner can normally be reached on Monday thru Thursday, 9am to 5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ardin H. Marschel can be reached on 571-272-0718. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AP

/Ardin Marschel/
Supervisory Patent Examiner, Art Unit 1614